



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/586,173

07/17/2006

Hiroataka Kawabata

MAT-8856US

2828

52473

7590

10/04/2011

RATNERPRESTIA

P.O. BOX 980

VALLEY FORGE, PA 19482

EXAMINER

BOBISH, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3746

MAIL DATE

DELIVERY MODE

10/04/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/586,173	KAWABATA ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER BOBISH	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1 and 3-9 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Amendment

The response filed by the applicant on 08/04/2011 with respect to the non-final action of 08/14/2009 has been considered and is not sufficient to overcome the previous rejection in view of Kwon, Ponsford and Kim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414).

Kwon teaches:

limitations from claim 1, a refrigerant compressor (**FIG. 2**) comprising: a hermetic container (**24**) which internally stores oil (**62**) and also accommodates a compression mechanism (**28**) for compressing refrigerant gas (**C. 4 Lines 11-**

Art Unit: 3746

20), wherein the oil is between a viscosity grade not lower than ISO VG3 to a viscosity grade not higher than ISO VG 8 (**C. 3 Lines 38-40**);

Furthermore, it would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to use an oil within the range of claim 1, as suggested by Kwon for the reasons stated above (lubrication, reduced sludge, etc), since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum value or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Kwon does not teach that the oil is a blended oil.

Ponsford teaches:

limitations from claim 1, a blended oil consisting of multiple components; a first component oil having a boiling point at 350 degrees Celsius or more (portion 5-6 from Table 1), and a second component having a boiling point of 300 degrees Celsius or less (portion 4 from Table 1); the specific ratios of the component oils are not explicitly taught, however Ponsford does teach that any ratio can be chosen to constitute a blended oil (C. 6 Lines 50-65); the viscosity of the oil is not specifically disclosed, rather it is compared to existing light oils, i.e. diesel (C. 5 Lines 24-30); existing diesels are known to be within a viscosity range of VG3-VG8 (Kim is cited as a teaching reference, C. 4 Lines 16-19 disclose a viscosity of 50-56 SSU at 100 degrees Fahrenheit which converts to below VG8); Thus Ponsford teaches a blend of component oils each having the characteristics recited in claim 1, forming a final oil with a viscosity as in claim 1, that is suggested for use in lubrication and refrigeration systems (C. 7 Lines 57-64);

It would have been obvious to one of ordinary skill in the art of compressors at the time of the invention to use the oil blend taught by Ponsford in the

Art Unit: 3746

compressor of Kwon, in order to provide a lubricant having desirable properties over varying temperatures, consistent viscosity and a rust inhibition (C. 7 Lines 16-30 of Ponsford).

Kwon, Ponsford and Kim disclose and teach of the refrigerant compressor in claim 1.

Kwon further teaches:

limitations from claim 3, wherein the refrigerant is R600a (C. 5 Lines 31-46) and the oil is a mineral oil or synthetic (C. 5 Lines 50-55);

limitations from claim 5, wherein the compression mechanism is a reciprocating mechanism (C. 4 Lines 11-20);

Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) as applied to claims 1, 3, 5 above, and in further view of Seiki (US Patent No. 5,108,634).

Neither Kwon, Ponsford nor Kim teaches that the oil is provided with a phosphorous extreme pressure additive, but Seiki does.

Seiki teaches:

limitations from claim 4, wherein phosphorous extreme pressure additive is added to a refrigerant oil (C. 3 Lines 49-51 and C. 4 Lines 13-17);

It would have been obvious to one having ordinary skill in the art of compressors to use a pressure additive as is taught by Seiki in the compressor taught by Kwon and modified by Ponsford and Kim, in order to increase the effectiveness of the oil in under pressures created by the compressor.

Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) as applied to claims 1, 3 and 5 above, and in further view of Nagai et al (US Patent No. 6,054,224).

Kwon teaches:

limitations from claim 6, an electric motor (FIG. 2 (26) C. 4 Lines 14-15), for driving a compression mechanism (28);

Neither Kwon nor Ponsford nor Kim teaches that the motor uses a low oligomer insulating material, but Nagai does.

Nagai teaches:

limitations from claim 6, an insulating material for an electric motor having low amounts of oligomers, for use in refrigeration systems, specifically compressors (C. 1 Lines 5-15);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to use low oligomer type insulation on the motor of the compressor taught by Kwon and modified by Ponsford and Kim, in a manner as taught by Nagai, in order to reduce the environmental damage caused by the compressor (C. 1 Lines 10-15 and Lines 42- 45 of Nagai).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 5 and 6 above, and in further view of Egawa et al (US PGPub No. 2006/0166844 A1).

Kwon, Ponsford, Kim and Nagai disclose and teach of the compressor in claims 1 and 6.

Neither Kwon nor Ponsford nor Kim nor Nagai discusses evaporation temperature, but Egawa does.

Egawa teaches in Page 1 paragraphs [0001, 0002, 0007-0009] of a lubricating oil composition having low evaporation loss and low viscosity; paragraph [0002] teaches specifically that combinations of oils having different evaporation temperatures results in unwanted viscosity levels; paragraph [0008] further teaches that kinematic viscosity is related to the evaporation losses of an oil;

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to seek a consistent evaporation temperature across the oil composition in order to accurately control the properties (viscosity) of the oil during use. Furthermore, because the kinematic viscosity is directly related to the evaporation of the oil, it is obvious that oils within a small range of viscosities would likely have similar evaporation temperatures.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 5 above, and in further view of Hannibal (US Patent No. 4,252,506).

Kwon, Ponsford, Kim and Nagai teach and disclose of the compressor in claims 1 and 6. Kwon teaches an electric motor (26) with windings (FIG. 2 (42) C. 4

Lines 30-31);

Neither Kwon, Ponsford, Kim nor Nagai explicitly teach a distributed winding, but Hannibal does.

Hannibal teaches:

limitations from claims 8 and 15, an electric motor (FIG. 3 (16) C. 3 Line 22), in a compressor (FIG. 3 (10) C. 3 Lines 20-21), wherein the motor is a distributed winding motor (C. 5 Lines 8-11);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention to substitute the winding structure taught by Hannibal and as is known in the art into the compressor motor of Kwon as modified by Ponsford, Kim and Nagai, in order to achieve predictable results in meeting the driving demands of the compressor and system.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kwon et al (US Patent No. 7,404,701 B2) in view of Ponsford et al (US Patent No. 5,799,626) in view of Kim et al (US Patent No. 4,101,414) in view of Nagai et al (US Patent No. 6,054,224) as applied to claims 1, 3, 6 and 13 above, and in further view of Yamazaki et al (US Patent No. 6,940,204 B2).

Art Unit: 3746

Kwon, Ponsford, Kim and Nagai teach and disclose of the compressor in claims 1 and 6. Kwon teaches an electric motor (26) with windings (FIG. 2 (42) C. 4 Lines 30-31);

Neither Kwon, Ponsford, Kim nor Nagai explicitly teach a concentrated winding, but Yamazaki does.

Yamazaki teaches:

limitations from claim 9, wherein an electric motor for a compressor is a concentrated winding motor (C. 1 Lines 15-19 and 27-37);

It would have been obvious to one having ordinary skill in the art of compressors at the time of the invention substitute the winding structure taught by Yamazaki into the compressor motor of Kwon as modified by Ponsford, Kim and Nagai, to achieve predictable results in reducing the size of the motor and compressor (C. 1 Lines 27-37 of Yamazaki).

Response to Arguments

In regards to the applicant's arguments pertaining to the Ponsford reference, the examiner respectfully disagrees.

Applicant argues that the oil taught by Ponsford is a specialty oil and cannot be extrapolated to apply to other oils. However, even if this is true, it does not preclude the oil taught by Ponsford from being used as a compressor lubricant in place of, or in

Art Unit: 3746

combination with other oils. The rejection as presented does not require the characteristics of the oil to be extrapolated onto other oils in the art.

Applicant further argues that the viscosity of the oil taught by Ponsford cannot be said to be within a certain range, as taught by claim 1; specifically that the Ponsford reference only teaches that the appearance of the oil is similar to diesel oils. However, C. 5 Lines 24-30 of Ponsford also discloses that the viscosity is similar to light oils (i.e. diesel oils). and the Kim reference provided with the rejection teaches diesel oil having a viscosity within the claimed range.

The Kwon reference further teaches that reducing sludge caused by the high temperature interaction between organic material metals and the lubricant is a known motivation in the compressor art, and further lists viscosity as a critical factor (C. 2 Lines 15-34). One of ordinary skill would find it routine to choose viscosity and temperature values within optimal ranges to reduce the formation of sludge.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

Art Unit: 3746

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER BOBISH whose telephone number is (571)270-5289. The examiner can normally be reached on Monday through Thursday, 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571)272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Bobish/
Examiner, Art Unit 3746

/Charles G Freay/
Primary Examiner, Art Unit 3746

/C. B./
Examiner, Art Unit 3746